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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/659,320	09/11/2003	Ernst A. Munter	91436-290	3794
22463	7590	05/31/2007	EXAMINER	
SMART AND BIGGAR			TSEGAYE, SABA	
438 UNIVERSITY AVENUE			ART UNIT	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/659,320	MUNTER ET AL.
	Examiner	Art Unit
	Saba Tsegaye	2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 20 September 2004.  
 2a) This action is FINAL.                            2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-25 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-3,5-20 and 22-25 is/are rejected.  
 7) Claim(s) 4 and 21 is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date 09/11/03.

4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_.  
 5) Notice of Informal Patent Application  
 6) Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Specification***

1. The disclosure is objected to because of the following informalities: Applicant is required to update the status of application S.N 09/954,192, cited on paragraphs (0020; 0024; 0026; 0027), by indicating that it is now --US Patent number 7,184,431--.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 24 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Line 2, the phrase "said information units" lacks antecedent basis.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 2, 17, 18 and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Langevin et al. (US 2003/0081548 A1).

Regarding claims 1, 17 and 25, Langevin discloses, in fig. 10, a communications switch for switching data between inputs (s0-s3) and outputs (d0-d3), said communications switch comprising:

P (s0-s3) inputs each for receiving data to be switched to q outputs (d0-d3);  
p+k information storage buffers (t0,0; t1,0; t2,0; t3,0; t0,1; t1,1; t2,1; t3,1) each of said information storage buffers comprising p+k storage locations (0200);  
an input data conditioner, comprising p inputs and p+k outputs, connected between said p inputs of said communications switch and said p+k information buffers, for distributing data received at said p (s0-s3) inputs of said input data conditioner to its p+k outputs (see fig. 10; 0200);  
an ingress commutator (rotator switch) for interconnecting each of said p+k information storage buffers to one of said p+k outputs of said input data conditioner (see fig. 10; 0200);  
an output data conditioner comprising p+k inputs and q (d0-d3) outputs, for distributing data from its p+k inputs to its q (d0-d3) outputs (see fig. 10; 0200);  
an egress commutator (rotator switch) for interconnecting each of said p+k information storage buffers to one of said p+k inputs of said output conditioner; said ingress commutator operable to cyclically interconnect each of said p+k inputs of said input data conditioner to each of said p+k information buffers to provide data from said each of said p+k inputs of said input data conditioner to said p+k information storage buffers (t0,0; t1,0; t2,0; t3,0; t0,1; t1,1; t2,1; t3,1), said egress commutator operable to cyclically interconnect each of said p+k information

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storage buffers (t0,0; t1,0; t2,0; t3,0; t0,1; t1,1; t2,1; t3,1) to said p+k inputs of said output data conditioner to provide data from said p (s0-s3) inputs to said q (d0-d3)outputs (see fig. 10; 0200).

Regarding claim 2, Langevin discloses the switch of claim 1, where p = q (see fig. 10).

Regarding claim 18, Lee discloses the method further comprising cyclically interconnecting the p+k tandem buffers (t0,0; t1,0; t2,0; t3,0; t0,1; t1,1; t2,1; t3,1) with the p+k intermediate inputs and the p+k intermediate outputs (see fig. 10; 0200).

6. Claims 1-3, 5-20 and 22-25 are rejected under 35 U.S.C. 102(e) as being anticipated by Lee et al. (2004/0085979 A1).

Regarding claims 1 and 25, Lee discloses a communications switch for switching data between inputs (input 1-N) and outputs (output 1-N), said communications switch comprising:

P (1-N) inputs each for receiving data to be switched to q outputs (1-N);

p+k information storage buffers (10; 30) each of said information storage buffers comprising p+k storage locations (see fig. 4);

an input data conditioner, comprising p inputs (1-N) and p+k outputs (10), connected between said p inputs of said communications switch and said p+k information buffers (10), for distributing data received at said p inputs of said input data conditioner to its p+k outputs (see fig. 4);

an ingress commutator (rotator switch) for interconnecting each of said p+k information storage buffers to one of said p+k outputs of said input data conditioner (see fig. 4);

an output data conditioner comprising  $p+k$  inputs and  $q$  ( $d_0-d_3$ ) outputs, for distributing data from its  $p+k$  inputs to its  $q$  ( $d_0-d_3$ ) outputs (see fig. 4);

an egress commutator (rotator switch) for interconnecting each of said  $p+k$  information storage buffers to one of said  $p+k$  inputs of said output conditioner; said ingress commutator operable to cyclically interconnect each of said  $p+k$  inputs of said input data conditioner to each of said  $p+k$  information buffers to provide data from said each of said  $p+k$  inputs of said input data conditioner to said  $p+k$  information storage buffers, said egress commutator operable to cyclically interconnect each of said  $p+k$  information storage buffers to said  $p+k$  inputs of said output data conditioner to provide data from said  $p$  inputs to said  $q$  outputs (0029-0032).

Regarding claims 2 and 14, Lee discloses the switch of claim 1, where  $p = q$  (see fig. 4).

Regarding claims 3, 15 and 16, Lee discloses the switch wherein the ingress commutator is clocked at a rate to transfer less data to each of the  $p+k$  information storage buffers during a time interval than is received at each of the  $p$  inputs during the time interval (0007; 0030; 0047).

Regarding claim 9, Lee discloses the switch wherein said output data conditioner comprises  $k$  one input,  $p$  output switches, each for switching data from its input to one of its  $p$  outputs (0030).

Regarding claim 13, Lee discloses a communications switch, comprising:  
 $p$  inputs (1-N) and  $q$  outputs (1-N);

a rotator switch comprising a  $(p+k) \times (p+k)$  switch fabric ((k,m)-dimensional crossbar fabric);

an input data conditioner for distributing data received at the p inputs to that switch fabric (0028-0030);

an output data conditioner in communication with the switch fabric for distributing data received from the switch fabric to the q outputs (0028-0030).

Regarding claim 17, Lee discloses a method of switching data between p (1-N) inputs and q outputs (I-N), comprising: distributing data from said p inputs to p+k intermediate inputs (10); loading data from said p+k inputs into p+k tandem buffers (10), each of said tandem buffers comprising p+k storage locations; unloading one location of each of said p+k tandem buffers at one of p+k intermediate outputs (11); combining data from said p+k intermediate outputs to provide switched data from said p inputs at said q outputs (31, 30).

Regarding claim 18, Lee discloses the method further comprising cyclically interconnecting the p+k tandem buffers (10) with the p+k intermediate inputs (11) and the p+k intermediate outputs (31; 30) (0028-0030).

Regarding claim 19, Lee discloses the method wherein data is loaded into said tandem buffers at a rate lower than a rate of traffic arriving at each of said p inputs (0007; 0030; 0047).

Regarding claim 20, Lee discloses the method wherein data is loaded into all of said tandem buffers at a rate at least equal to a rate of arrival of data at all of said p inputs (0047).

Regarding claims 22 and 24, Lee discloses the method wherein at least some of said data is transferred to a selected location of an interconnected tandem buffer, the location based on a destination for said at least some of said data and stripping header from data (it is inherent to use header and transfer data based on destination).

Regarding claim 23, Lee discloses the method further comprising combining data into data units, and including a header in each of said data units, each header including destination information and a sequence number for said each of said data units (009; 0042).

Regarding claims 5-8 and 10-12, they are math equations, which do not show uniqueness and are not critical to the invention.

#### ***Allowable Subject Matter***

7. Claims 4 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Awadallah et al. (IEEE INFOCOM'2000, Vol. 2, pp. 529-537) discloses analysis of a packet switch with memories running slower than the line-rate.

Beshai et al. (US 6,486,983 B1) discloses agile optical-core distributed packet switch.

Jeffrey et al. (US 5,528,406) discloses telecommunications switching device.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saba Tsegaye whose telephone number is (571) 272-3091. The examiner can normally be reached on Monday-Friday (7:30-5:00), First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi H. Pham can be reached on (571) 272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ST  
May 25, 2007

  
CHI PHAM  
SUPERVISORY PATENT EXAMINER  
5/25/08